



# Research Brief

## Does Special Education Improve Preschoolers' Academic Skills?<sup>1</sup>

Amanda L. Sullivan & Samuel Field

This study investigated associations between enrollment in preschool special education and school readiness skills for children with mild to moderate delays. Findings indicated that on average, children who received preschool special education services had lower scores in reading and math in kindergarten than similar children who did not receive such service. These results could be due to a range of factors that should be explored further, including the nature of special education services for young children as well as possible differences between the groups of children with and without special education experiences.

Federal law requires states to offer preschool special education to children who have physical, language, cognitive, and/or behavioral delays from age three through kindergarten entry. In 2010, nearly 735,000 children received such services, which is about 6% of all children ages 3 to 5.

Preschool special education can be delivered in a variety of settings, including early childhood education centers or families' homes. Unlike early childhood education provided to typically developing children, preschool special education frequently focuses on remediating specific delays (e.g., improving speech or motor skills) or supporting parents' efforts to engage with their children. These services are individualized to the child's unique needs and can include a variety of therapies and ancillary services.

Although there is considerable research showing that high-quality early childhood education enhances children's short- and long-term outcomes, there has been considerably less attention on the effectiveness of preschool special education. Research examining causal impacts of special education on education outcomes for school-aged children has not been favorable. As such, the effectiveness of preschool special education warrants investigation.

The nature and circumstances of preschool special education make it difficult for researchers to conduct experimental research to evaluate the effectiveness

of these services. For instance, researchers cannot use the traditional method of randomly assigning participants to treatment (i.e., services) or control (i.e., no services) groups because it is illegal and unethical to deny children preschool special education when they are entitled to them. Instead, certain statistical analyses can be used to approximate experimental research in order to allow for casual inference about the effectiveness of interventions like preschool special education. The present study used one of these approaches, propensity score weighting, which attempts to create groups that are otherwise equal with the exception of a specific factor, in this case preschool education experience.

### The Study

This study addresses the question, *Do children who received preschool special education, on average perform better academically, than a comparable group who did not receive such services?* The study used a sample of 8,000 children from the Early Childhood Longitudinal Study–Birth Cohort, a national study that began in 2001 and gathered data on 10,700 U.S. children from birth through kindergarten entry. Six hundred children in the sample received preschool special education services.

Propensity score matching approximated “treatment” and “control” groups. The 600 children receiving

<sup>1</sup>This research brief is based on the following published study: Sullivan, A. L. & Field, S. (2013) Do preschool special education services make a difference in kindergarten reading and mathematics skills?: A propensity score weighting analysis. *Journal of School Psychology*. Advance online publication. doi: 10.1016/j.jsp.2012.12.004

This published study can be purchased at: <http://www.sciencedirect.com/science/article/pii/S0022440512001112>



### **Preschool Special Education Status**

In this study, special education status was recorded at age 3.

To receive this status, the parent or care provider reported that the child received special education services or had an Individualized Education Plan (IEP) in place. Children were included in this status if they were receiving services prior to this report as well as recently identified.

All children reported as receiving services, regardless of their specific individualized program or duration of service, were included in the study.

services were matched to those who did not receive services based on numerous factors, such as their prior scores on developmental and educational assessments, ethnicity, birth weight, and parent support. When the children entered kindergarten, their reading and math skills were assessed and researchers examined possible differences in scores between the group of children who received preschool special education and those who did not.

### **Results**

The group of children who did not receive preschool special education services, but who were matched on prior performance and so showed similar delays, demonstrated better kindergarten reading and mathematics performance than children with delays who did receive services. Thus, this study indicated that, on average, children who received preschool special education had moderately lower scores in reading and math than may be expected if they had not received preschool special education. Although significant, these findings were only moderately associated and should be considered within that context.

### **Conclusion**

Similar to other research that has shown school-age special education tends to have few positive associations with students' skill gains, these results suggest that preschool children with delays, on average, may or may not benefit from the very wide ranging and varied services that encompass preschool special education. For the average preschool child with mild to moderate delays or disabilities, preschool special

education did not support developing academic skills necessary for kindergarten success.

This study should not be construed as evidence that young children with disabilities and developmental delays do not need specialized early education. This study examined academic skills, but it could be that the focus of current preschool special education services may not lend themselves to the promotion of early reading and math skills even though it may be conducive to gains in other areas of child development (e.g., speech, motor skills). Moreover, the study aggregated special education services of all types into one estimate of services and examined the benefits on the average child enrolled. Thus it is possible that very important, and possibly significant benefits for specific children or specific forms of services that are masked by this approach.

One possible explanation for these results may be the quality of the curricula and teaching practices utilized in early childhood special education settings. For example, are up-to-date, research-based curricula and practices being used? If not, they may be contributing to the ineffectiveness of programming. Additionally, programs' focus on remediating delays and promoting family functioning may not foster pre-academic development. Further integration of high quality early childhood education programming with special education knowledge and effective techniques could help advance the ways in which inclusive early education services for a broad range of children can be provided.

The propensity score matching methodology is not without limitations, so findings should be replicated and extended in future studies. For example, the matching used may have not replicated random assignment closely enough to eliminate differences between the two groups. It may be useful to disaggregate special education services and more closely examine impacts of types of services or techniques for certain groups of children.

In sum, preschool special education has the potential to support early academic development in math and reading in addition to remediating delays and promoting family functioning. Considering the high cost and high stakes associated with preschool special education identification and services, additional investigations of the impacts of preschool special education services on young children's development may be important for ensuring that such services are effective.

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